

# List of All Chemicals

## P Angelica dahurica (Apiaceae)

Common name(s)

Bai Zhi

How used

Medicinal

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

| Chemical                                       | Plant Part   | Low PPM  | High PPM | StdDev | *Reference |
|--|--|--|----------|--------|------------|
| 5-(2-HYDROXY-3-METHOXY-3-METHYLBUTOXY)PSORALEN | Root   | --   | --       |        | *          |
| 5-METHOXY-8-HYDROXYSORALEN                     | Root   | --   | --       |        | *          |
| 6,7-DIMETHYLESCULETIN                          | Root   | --   | --       |        | *          |
| <b>Activities (3)</b>                          |  |  |          |        |            |
| Analgesic                                      |  |  |          |        |            |
| Antiinflammatory                               |  |  |          |        |            |
| Choleretic 70 ipr                              |  |  |          |        |            |
| 6-METHOXY-7-ISOPENTENYLOXYCOUMARIN             | Root   | --   | --       |        | *          |
| 8-HYDROXY-5-METHOXY-PSORALEN                   | Root   | --   | --       |        | *          |
| ALLOISOIMPERATORIN                             | Root   | --   | --       |        | *          |
| ANGELIC-ACID                                   | Root   | --   | --       |        | *          |
| <b>Activities (1)</b>                          |  |  |          |        |            |
| Sedative                                       |  |  |          |        |            |
| ANGELITOXIN                                    | Root   | --   | --       |        | *          |
| ANHYDROBYAKANGELICIN                           | Root   | --   | --       |        | *          |
| BYAKANGELICIN                                  | Root   | --   | --       |        | *          |
| <b>Activities (5)</b>                          |  |  |          |        |            |
| Antiestrogenic                                 |  |  |          |        |            |
| Antigonadotropic                               | =ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp; ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp |  |          |        |            |
| Antihistaminic 25 mg/kg ipr mus                |  |  |          |        |            |
| Antilipogenic                                  |  |  |          |        |            |
| Calcium-Antagonist                             |  |  |          |        |            |
| BYAKANGELICOL                                  | Root   | --   | --       |        | *          |
| CALCIUM  | Root   | --   | 2140.0   | -0.58  | *          |
| <b>Activities (28)</b>                         |  |  |          |        |            |
| AntiPMS 1 g/day                                |  |  |          |        |            |
| Antiallergic 500 mg/day                        |  |  |          |        |            |
| Antianxiety                                    |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antiarrhythmic 500-1,500 mg                    |  |  |          |        |            |
| Antiarthritic 1,000 mg/day                     |  |  |          |        |            |
| Antiatherosclerotic 500 mg/day                 |  | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.               |          |        |            |
| Anticlimacteric 1,000-1,500 mg/day             |  |  |          |        |            |
| Antidepressant                                 |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antidote (Aluminum)                            |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antidote (Lead)                                |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antihyperkinetic                               |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antihypertensive                               |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antiinsomniac                                  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |          |        |            |
| Antimenopausal 1,000-1,500 mg/day              |  |  |          |        |            |

|                                   |  |
|-----------------------------------|--|
| Antiosteoporotic 500-2,000 mg/day |  |
| Antiperiodontitic 750 mg/day      | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.               |
| Antirheumatic 1,000 mg/day        |  |
| Antistress 500-1,500 mg/day       | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antitic                           |  |
| Anxiolytic 500-1,500 mg/day       |  |
| Calcium-Channel-Blocker           |  |
| Diuretic                          |  |
| Hypocholesterolemic 500 mg/day    | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.               |
| Hypotensive 1 g/day               | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.               |
| Laxative 1,000-1,200 mg           |  |
| Tranquilizer 500-1,500 mg/day     |  |
| Vasodilator                       |  |

|             |      |    |      |       |
|-------------|------|----|------|-------|
| CEDRELOPSIN | Root | -- | --   | *     |
| CNIDILIN    | Root | -- | --   | *     |
| COPPER      | Root | -- | 10.0 | -0.19 |

#### Activities (12)

|                         |  |
|-------------------------|--|
| Antianemic              |  |
| Antiarthritic           |  |
| Antidiabetic 2-4 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.               |
| Antifatigue             |  |
| Antiinflammatory        | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.               |
| Antinociceptive         | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.               |
| Antiosteoporotic        |  |
| Cardioprotective        |  |
| Contraceptive           | Martindale's 28th  |
| Hypocholesterolemic     | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Immunomodulator         |  |
| Schizophrenogenic       | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |

|             |      |    |    |   |
|-------------|------|----|----|---|
| IMPERATORIN | Root | -- | -- | * |
|-------------|------|----|----|---|

#### Activities (25)

|                                      |   |
|--------------------------------------|---|
| Antiaflatoxin<br>IC50=2.66 uM        |   |
| Antiaflatoxin 0.7 ppm                |   |
| Antiaggregant                        |   |
| Antialopanic                         | Martindale's 28th   |
| Anticonvulsant                       |   |
| Antiinflammatory                     |   |
| Antileukodermic                      |   |
| Antimitotic 5-25<br>ug/ml            | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.  |
| Antimutagenic                        | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219. |
| Antiplatelet                         |   |
| Antitumor-Promoter<br>IC86=50 ug/ml  |   |
| Antivitiligo                         |   |
| Bufocide                             | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.                                  |
| Calcium-Antagonist<br>IC50=4 ug/ml   |   |
| Calcium-Antagonist<br>31.6 ug/ml gpg |   |
| Cancer-Preventive<br>5-25 ug/ml      | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.  |
| Cytochrome-P450-<br>Inhibitor 2 nM   |   |
| DME-Inhibitor<br>IC50=116 uM         | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.                       |
| Hepatoprotective<br>IC50=2.66 uM     |   |
| Hepatoprotective 0.7<br>ppm          |   |
| Hepatotoxic                          |   |
| Lipolytic                            |   |
| Molluscicide                         |   |
| Piscicidle                           | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.                                  |

Sedative Buchbauer, G., Jirovetz\*, L., Nikiforov, A., Remberg, G., Raverdin, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. *J. Ess. Oil Res.*, 2: 185-191, 1990.

|                                     |  |    |        |       |   |
|-------------------------------------|--|----|--------|-------|---|
| IRON                                | Root   | -- | 1800.0 | 2.17  | * |
| <b>Activities (6)</b>               |  |    |        |       |   |
| Antiakathisic                       | Martindale's 29th  |    |        |       |   |
| Antianemic                          | Martindale's 29th  |    |        |       |   |
| Anticanker                          |  |    |        |       |   |
| Anticheilitic                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |    |        |       |   |
| Antimennorrhagic 100 mg/day/wmn/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |    |        |       |   |
| Prooxidant                          |  |    |        |       |   |
| ISOBYAKANGELICOL                    | Root   | -- | --     |       | * |
| ISOIMPERATORIN                      | Root   | -- | --     |       | * |
| <b>Activities (8)</b>               |  |    |        |       |   |
| Antitumor-Promoter IC94=50 ug/ml    |  |    |        |       |   |
| Artemicide ED50=6->100 ug/ml        |  |    |        |       |   |
| Calcium-Antagonist                  |  |    |        |       |   |
| Cytochrome-P450-Inhibitor 2 nM      |  |    |        |       |   |
| Cytotoxic (Breast) ED50=6.56 ug/ml  | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.    |    |        |       |   |
| Cytotoxic (Colon) ED50=>10 ug/ml    | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.    |    |        |       |   |
| DME-Inhibitor IC50=46 uM            | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.                          |    |        |       |   |
| Pesticide                           |  |    |        |       |   |
| MAGNESIUM                           | Root   | -- | 3.67   | -1.36 | * |
| <b>Activities (65)</b>              |  |    |        |       |   |
| AntiCFS                             |  |    |        |       |   |
| AntiLyme 400-1,000 mg               |  |    |        |       |   |
| AntiMS                              |  |    |        |       |   |
| AntiPMS 400-800 mg/day/wmn/orl      |  |    |        |       |   |
| AntiPMS 400-800 mg/day/wmn orl      |  |    |        |       |   |
| AntiRaynaud's 280-350 mg/day        |  |    |        |       |   |
| Antiaggregant 400 mg/day            |  |    |        |       |   |
| Antialcoholic                       |  |    |        |       |   |
| Antianginal 400 mg/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |    |        |       |   |
| Antianorectic                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |    |        |       |   |
| Antianxiety 400 mg/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |    |        |       |   |
| Antiarrhythmic 400 mg/day           |  |    |        |       |   |
| Antiarthritic                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |    |        |       |   |
| Antiasthmatic                       | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |    |        |       |   |
| Antiatherosclerotic 400 mg/day      |  |    |        |       |   |
| Anticephalagic                      |  |    |        |       |   |
| Anticlimacteric 500-750 mg/day      |  |    |        |       |   |
| Anticonvulsant                      | Facciola, S. 1998. Cornucopia - A Source Book of Edible Plants. Kampong Publications, Vista CA. 713 pp.  |    |        |       |   |
| Anticorony 400 mg/day               | Challe, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reservse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |    |        |       |   |
| Antidepressant                      | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |    |        |       |   |
| Antidiabetic 400-800 mg/man/day     |  |    |        |       |   |
| Antidysmenorrheic 100 mg 4 x/day    | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |    |        |       |   |
| Antiendometriotic 500 mg/day        |  |    |        |       |   |
| Antienterotic                       |  |    |        |       |   |
| Antiepileptic 450 mg/day            |  |    |        |       |   |
| Antifatigue                         |  |    |        |       |   |
| Antifibromyalgic 200-300 mg 3x/day  |  |    |        |       |   |
| Antigastric                         |  |    |        |       |   |
| Antiglaucomic                       |  |    |        |       |   |

|  |  |
|--|--|
| Antihypertensive                         |  |
| Antihypoglycemic                         | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antiinflammatory 100 mg 4 x/day          | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antiinsomniac                            | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antilithic                               | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antimastalgic                            | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antimenopausal 500-750 mg/day            |  |
| Antimigraine 200 mg/day/man              | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antimital-valve-prolapse                 |  |
| Antinephrolytic                          |  |
| Antineurotic                             | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antosteoporotic 500-1,000 mg/day/wmn/orl |  |
| Antiplaque 500-1,000 mg/day              |  |
| Antiretinopathic 400 mg/day              | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antispasmodic                            |  |
| Antispasmophilic 500 mg/day              | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antistress 500-750 mg/day                |  |
| Antistroke 400 mg/day                    | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antisyndrome-X 400 mg/man/day            | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Anxiolytic 500-750 mg/day                |  |
| CNS-Depressant                           | Facciola, S. 1998. <i>Cornucopia - A Source Book of Edible Plants</i> . Kampong Publications, Vista CA. 713 pp.  |
| Calcium-Antagonist                       |  |
| Cardioprotective                         |  |
| Diuretic                                 |  |
| Hypocholesterolemic 400 mg/day           | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Hypotensive 260-500 mg/day               |  |
| Immunomodulator                          |  |
| Insulinogenic 400 mg/day                 | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Laxative 300-500 mg/day                  |  |
| Litholytic                               |  |
| Myorelaxant 100 mg 4 x/day               | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Neurotransmitter                         |  |
| Tranquilizer 500-750 mg/day              |  |
| Uterorelaxant 100 mg 4 x/day             | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Vasodilator                              |  |

## MANGANESE

Root -- 110.0 0.77 \*

### Activities (14)

|                                 |  |
|---------------------------------|--|
| AntiPMS                         |  |
| Antialcoholic                   | Forest H. Nielsen, USDA, Grand Forks, various publications.  |
| Antianemic                      | Martindale's 28th  |
| Antiarthritic                   |  |
| Antidiabetic 3-5 mg/day         | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antidiabetic 10-30 mg/man/day   |  |
| Antidiscotic                    | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antidyskinetic                  | Martindale's 28th  |
| Antiepileptic 450 mg/day        | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antosteoporotic                 |  |
| Antitoxic                       | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antioxidant                     |  |
| Antisyndrome-X 10-30 mg/man/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Hypoglycemic 10-30 mg/man/day   |  |

## MARMESIN

Root -- -- \*

## NEOBYAKANGELICOL

Root -- -- \*

## OXYPEUCEDANIN

Root -- -- \*

### Activities (6)

Antitumor-Promoter IC32=50

|                                   |   |
|-----------------------------------|---|
| Calcium-Antagonist IC50=1.2 ug/ml |   |
| DME-Inhibitor IC50=81 uM          | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Fungicide MIC=10 ug               |   |
| Lipolytic                         |   |
| Mutagenic                         | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |

|                                    |      |    |         |      |
|------------------------------------|------|----|---------|------|
| OXYPEUCEDANIN-HYDRATE              | Root | -- | --      | *    |
| <b>Activities (2)</b>              |      |    |         |      |
| Antihistaminic 25 mg/kg ipr mus    |      |    |         |      |
| Calcium-Antagonist                 |      |    |         |      |
|                                    |      |    |         |      |
| PANGELIN                           | Root | -- | --      | *    |
| PHELOOPTERIN                       | Root | -- | --      | *    |
| <b>Activities (2)</b>              |      |    |         |      |
| Calcium-Antagonist                 |      |    |         |      |
| Lipolytic                          |      |    |         |      |
|                                    |      |    |         |      |
| POTASSIUM                          | Root | -- | 26600.0 | 0.79 |
| <b>Activities (14)</b>             |      |    |         |      |
| Angiotensin-Receptor-Blocker       |      |    |         |      |
| Antiarrhythmic                     |      |    |         |      |
| Antidepressant                     |      |    |         |      |
| Antifatigue                        |      |    |         |      |
| Antihypertensive                   |      |    |         |      |
| Antispasmodic                      |      |    |         |      |
| Antistroke                         |      |    |         |      |
| Anxiolytic                         |      |    |         |      |
| Beta-Blocker                       |      |    |         |      |
| Cardioprotective 3,000-5,000 mg    |      |    |         |      |
| Cardiotoxic 18,000 mg/man/day      |      |    |         |      |
| Diuretic                           |      |    |         |      |
| Hypotensive                        |      |    |         |      |
| Vasodilator                        |      |    |         |      |
|                                    |      |    |         |      |
| PSORALEN                           | Root | -- | --      | *    |
| <b>Activities (31)</b>             |      |    |         |      |
| Antidepressant IC50=15-62 uM       |      |    |         |      |
| Antileukodermic                    |      |    |         |      |
| Antimitotic                        |      |    |         |      |
| Antimutagenic                      |      |    |         |      |
| Antipsoriac                        |      |    |         |      |
| Antispasmodic                      |      |    |         |      |
| Antitubercular                     |      |    |         |      |
| Antitumor                          |      |    |         |      |
| Antitumor-Promoter IC13=50 ug/ml   |      |    |         |      |
| Antiviral                          |      |    |         |      |
| Artemicide LC50=5.93 ug/ml         |      |    |         |      |
| Bacteriophagicide                  |      |    |         |      |
| Calcium-Antagonist                 |      |    |         |      |
| Cancer-Preventive                  |      |    |         |      |
| Contraceptive                      |      |    |         |      |
| Cytotoxic ED50=2-30 ug/ml          |      |    |         |      |
| Cytotoxic (Breast) ED50=2.21 ug/ml |      |    |         |      |
| Cytotoxic (Colon) ED50=26.84 ug/ml |      |    |         |      |
| Cytotoxic (Lung) ED50=30.38 ug/ml  |      |    |         |      |

|                                       |  |
|---------------------------------------|--|
| Genotoxic                             | Merck 11th Edition   |
| Hypotensive                           |  |
| Insecticide                           | Grenand, P., Moretti, C., and Jacquemin, H. 1987. <i>Pharmacopees Traditionnelles en Guyane</i> . l'ORSTROM, Paris. 569 pp.  |
| MAO-A-Inhibitor IC50=15 uM            |  |
| MAO-B-Inhibitor IC50=62 uM            |  |
| Mutagenic                             | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.                 |
| Pesticide                             |  |
| Photocarcinogenic                     |  |
| Phototoxic                            |  |
| Phytoalexin                           | Merck 11th Edition   |
| Topoisomerase-II-Inhibitor ID50=10 mM | Hu, C. Q., Lee, K. S. 1992. Coumarins From the Roots of <i>Seseli mairei</i> and Inhibition of DNA Topoisomerase II Activity. <i>Tianran Chanwu Yanjiu Yu Kaifa</i> , 4: 6-10. |

| SCOPOLETIN                                    | Root  | -- | -- | * |
|---|---|----|----|---|
| <b>Activities (44)</b>                        |   |    |    |   |
| Aldose-Reductase-Inhibitor IC50=6.2 ug/ml cow | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |    |    |   |
| Allelochemical IC89=2 mM                      | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.      |    |    |   |
| Analgesic                                     |   |    |    |   |
| Anesthetic                                    | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.   |    |    |   |
| Antiadrenergic                                | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.   |    |    |   |
| Antiaflatoxin IC50=65 uM                      |   |    |    |   |
| Antiaflatoxin 11.4 ppm                        |   |    |    |   |
| Antiarrhythmic                                |   |    |    |   |
| Antiasthmatic                                 |   |    |    |   |
| Antibacterial                                 | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |    |    |   |
| Antibronchoconstrictor                        |   |    |    |   |
| Anticholinergic                               |   |    |    |   |
| Antiedemic                                    |   |    |    |   |
| Antifeedant                                   | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |    |    |   |
| Antihelatotoxic                               | Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.   |    |    |   |
| Antiinflammatory ED 1-10 ug/ear               |   |    |    |   |
| Antileukotrieneogenic                         |   |    |    |   |
| Antimutagenic                                 | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.  |    |    |   |
| Antioxidant                                   |   |    |    |   |
| Antiproliferant                               |   |    |    |   |
| Antiprostaglandin                             |   |    |    |   |
| Antiseptic                                    |   |    |    |   |
| Antispasmodic                                 |   |    |    |   |
| Antitumor 2.9 ug/ml                           |   |    |    |   |
| Apoptotic                                     |   |    |    |   |
| Bronchorelaxant                               | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.   |    |    |   |
| CNS-Depressant                                | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.   |    |    |   |
| CNS-Stimulant                                 | Watt, J.M. and Breyer-Brandwijk, M.G. 1962. <i>The Medicinal and Poisonous Plants of Southern and Eastern Africa</i> . E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.  |    |    |   |
| Cancer-Preventive                             | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |    |    |   |
| Cholagogue                                    | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.   |    |    |   |
| Choleretic                                    | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.   |    |    |   |
| Cytotoxic                                     |   |    |    |   |
| Fungicide 2 mM                                |   |    |    |   |
| Hepatoprotective                              | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.   |    |    |   |
| Herbicide                                     | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |    |    |   |
| Hypoglycemic                                  | Economic & Medicinal Plant Research, 6: 165   |    |    |   |
| Hypotensive                                   |   |    |    |   |
| MAO-Inhibitor                                 |   |    |    |   |
| Musculotropic                                 | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.   |    |    |   |
| Myorelaxant                                   |   |    |    |   |
| Pesticide                                     |   |    |    |   |
| Phytoalexin                                   |   |    |    |   |
| Phytohormonal                                 | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |    |    |   |
| Uterosedative                                 | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.  |    |    |   |

|  |  |    |       |       |
|--|--|----|-------|-------|
| SEN-BYAK-ANGELICOLE                              | Root   | -- | --    | *     |
| SODIUM   | Root   | -- | 143.0 | -0.45 |
| <b>Activities (1)</b>                            |  |    |       |       |
| Hypertensive                                     | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |    |       |       |
| <b>TERT-O-METHYLBYAKANGELICIN</b>                |  |    |       |       |
| XANTHOTOXIN                                      | Root   | -- | --    | *     |
| <b>Activities (43)</b>                           |  |    |       |       |
| Antiaflatoxin IC50=2.5 uM                        |  |    |       |       |
| Antiaflatoxin 0.54 ppm                           |  |    |       |       |
| Antibacterial                                    | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |       |       |
| Antidermatitic                                   | Martindale's 29th  |    |       |       |
| Antifeedant                                      | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |    |       |       |
| Antihistaminic                                   |  |    |       |       |
| Antiinflammatory 20 mg/man/day                   |  |    |       |       |
| Antikeratotic                                    | Martindale's 29th  |    |       |       |
| Antileucodermic                                  | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |       |       |
| Antilymphomeric 600 ug/kg +PUVA (extracorporeal) |  |    |       |       |
| Antimitotic 5-25 ug/ml                           |  |    |       |       |
| Antimutagenic                                    | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.  |    |       |       |
| Antimycotic                                      | Martindale's 29th  |    |       |       |
| Antipityriasic                                   | Martindale's 29th  |    |       |       |
| Antipruritic                                     | Martindale's 29th  |    |       |       |
| Antipsoriac                                      | Martindale's 29th  |    |       |       |
| Antiscleromyxoedemic                             | Martindale's 29th  |    |       |       |
| Antispasmodic                                    |  |    |       |       |
| Antitumor-Promoter IC24=50 ug/ml                 |  |    |       |       |
| Antivitiligo 20 mg/man/day                       |  |    |       |       |
| Artemicide LC50=5.93 ug/ml                       | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.  |    |       |       |
| Bufocide   | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |       |       |
| Calcium-Antagonist IC50=551 uM gpg               |  |    |       |       |
| Cancer-Preventive 5-25 ug/ml                     | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.   |    |       |       |
| Cytotoxic ED50=7-29 ug/ml                        | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.  |    |       |       |
| Cytotoxic (Breast) ED50=7.21 ug/ml               | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.  |    |       |       |
| Cytotoxic (Colon) ED50=29.46 ug/ml               | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.  |    |       |       |
| Cytotoxic (Lung) ED50=28.99 ug/ml                | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.  |    |       |       |
| Dermatitogenic                                   | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |       |       |
| Emetic   |  |    |       |       |
| Fungicide IC85=1,000 ppm                         |  |    |       |       |
| Fungicide IC100=2,000 ppm                        |  |    |       |       |
| Fungistat EC50=21.6 ug/ml                        | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |    |       |       |
| Hepatoprotective IC50=2.5 uM                     |  |    |       |       |
| Hepatoprotective 0.5 ppm                         |  |    |       |       |
| Herbicide  | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |    |       |       |
| Hypertrichotic                                   | Martindale's 29th  |    |       |       |
| Insecticide                                      | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |    |       |       |
| Lipolytic  |  |    |       |       |
| Molluscicide                                     | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |       |       |
| Pesticide  |  |    |       |       |
| Phytoalexin                                      | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |    |       |       |
| Piscicide  | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |       |       |
| XANTHOTOXOL                                      | Root   | -- | --    | *     |

**Activities (5)**

|                              |   |
|------------------------------|---|
| Antihistaminic               | Pakistan Encyclopedia Planta Medica. 1986.  |
| Antimitotic 5-25 ug/ml       | Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.   |
| Antinicotinic                | Williamson, E. M., and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Cancer-Preventive 5-25 ug/ml | Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.   |
| Cytotoxic                    | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.                                    |

ZINC

Root

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29.0

0.21

\*

**Activities (77)**

|  |  |
|--|--|
| ACE-Inhibitor                          |  |
| Analgesic                              |  |
| AntiBPH 25-60 mg/day                   |  |
| AntiCrohn's                            | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| AntiHIV                                |  |
| Antiacne 135 mg/day                    |  |
| Antiacrodermatitic 8-34 mg/day/orl/chd | Martindale's 29th  |
| Antialcoholic                          |  |
| Antialopeptic                          | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antialzheimeran 50 mg/day              | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antiangiogenic                         |  |
| Antianorexic                           | Martindale's 29th  |
| Antiarthritic 50 mg/3x/day/orl/man     |  |
| Anticanker 100 mg/day                  | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Anticataract 30 mg/day                 | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Anticoeliac                            | Martindale's 28th  |
| Anticold 50 mg                         | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Anticolitic                            | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Anticoronal 30 mg/day                  | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antidandruff                           | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antidementia                           |  |
| Antidiabetic 30 mg/day                 | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antidote (Cadmium)                     | Let's Live, May 1989.  |
| Antidisgeuzic                          |  |
| Antieczemic 150 mg/day                 | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antiencephalopathic                    | Martindale's 29th  |
| Antiepileptic 100 mg/day               | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antifibrotic 30 mg                     |  |
| Antifuruncular 45 mg/3x/day/man        | Martindale's 28th  |
| Antihangover 15 mg                     |  |
| Antitherapeutic? 25-60 mg/day          |  |
| Antiimpotence                          | Martindale's 29th  |
| Antiinfective 50 mg/day                | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antiinfertility 60 mg/day              | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antiinsomniac                          | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antilepric                             | Martindale's 29th  |
| Antileukonychic                        |  |
| Antilymphomic                          |  |
| Antimaculitic                          |  |
| Antimetastatic                         |  |
| Antineuropathic                        |  |
| Antinyctalopic                         |  |
| Antiobesity 30 mg/day                  | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antosteoporotic                        |  |
| Antiperiodontic                        |  |
| Antiplaque                             | Martindale's 29th  |
| Antiprolactin                          | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antiprostatic 50 mg/man/day/orl        | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antirheumatic                          | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Antiseptic 50 mg/day                   | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antispare-Tire 30 mg/day               | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |

**Immunomodulatory**

|  |  |
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| Antisyndrome-X 30 mg/day                   | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antitinnitin 60-120 mg/day                 | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Antitriglyceride 30 mg/day                 | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiulcer 50 mg/3x/day/man                 | Martindale's 28th  |
| Antiulcer 88 mg/rat/day/15 days            |  |
| Antiviral?                                 | Martindale's 29th  |
| Astringent                                 | Martindale's 28th  |
| Collagenic                                 |  |
| Copper-Antagonist                          | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Deodorant                                  | Martindale's 29th  |
| Detoxicant (Alcohol)                       |  |
| Ergogenic                                  |  |
| Hypotensive 30 mg/day                      | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Immunomodulator                            |  |
| Immunostimulant                            | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.   |
| Immunosuppressant 300 mg/day/6 wks/orl/man | Martindale's 29th  |
| Insulinogenic 30 mg/day                    | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Leptogenic 30-60 mg/man/day                | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Mucogenic                                  | Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. <i>J. Pharm. Pharmacol.</i> 42: 657-659, 1990.   |
| NF-kB-Inhibitor                            |  |
| Pesticide                                  |  |
| Spermigenic 60 mg/day                      | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Testosteronogenic 60 mg/day                | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.   |
| Trichomonicide                             | Martindale's 29th  |
| Vulnerary                                  | Martindale's 28th  |